

REMARKS

On page 2 of the Action, claims 1-4 were rejected under 35 U.S.C. 102(b) as being anticipated by Boik (US 4,504,009). On page 2 of the Action, claims 8 and 9 were rejected under 35 U.S.C. 102(b) as being anticipated by Jeager (US 6,319,436). On page 3 of the Action, claims 1, 2 and 12 were rejected under 35 U.S.C. 102(b) as being anticipated by Kraus (US 4,761,319).

On page 3 of the Action, claims 5 and 6 were rejected under 35 U.S.C. 103(a) as being unpatentable over Boik as applied to claim 1 above, and further in view of Mejlsø (US 3,181,411). On page 4 of the Action, claim 7 was rejected under 35 U.S.C. 103(a) as being unpatentable over Boik as applied to claim 1 above, and further in view of Jeager (US 6,319,436). On page 4 of the Action, claims 8, 10 and 11 were rejected under 35 U.S.C. 103(a) as being unpatentable over Boik in view of Mejlsø and Jeager.

In view of the rejections, claim 1 has been amended to include the limitations of claim 5 and clarify the features of the invention, and claim 5 has been canceled. Claim 8 has been amended to include a part of the limitations of claim 10, and claim 10 has been amended accordingly. New claim 13 has been added to include further limitations.

As recited in amended claim 1 of the invention, a hole plug for blocking a hole comprises a head portion having a back surface; a foot portion extending from the back surface of the head portion to be inserted into the hole; a column projecting from the back surface of the head portion inside the plate members; and a plurality of supporting means. The foot portion includes a plurality of plate members extending from the back surface of the head portion and arranged circularly with a space between two of the plate members. Each of the plate members has an engaging step portion at a base close to the head portion for engaging the hole. Each supporting means is disposed between the column and each of the plate members such that the column is connected to the plate members through the supporting means. Accordingly, the supporting means supports and suppresses the plate member from bending inwardly.

As recited in claim 8 of the invention, a hole plug for blocking a hole comprises a head portion having a back surface; a foot portion extending from the back surface of the head portion to be inserted into the hole; a plurality of guide means disposed between two of plate members and extending from the back surface of the head portion; and a column projecting from the back surface of the head portion inside the plate members. The foot portion includes a plurality of plate members extending from the back surface of the head portion and arranged circularly with a space between two of the plate members. Each of the plate members has an engaging step portion at a base close to the head portion for engaging the hole. Each of the guide means has a length longer than that of each of the plate members. The column is integrally connected to the guide means to hold and support the guide means.

Boik discloses a closure having means for retention in tubular container. In Fig. 14 in Boik, a closure unit 74 includes an end panel 55 and annular wall 64 extending from a back surface of the end panel 55. The end panel 55 is provided with retaining lugs 56 at circumferentially spaced intervals. The annular wall 64 is provided with back-up lugs 75 adjacent the connection of the wall 64 to the end panel 55. When the retaining lugs 56 deform inwardly, the lugs 75 contact surfaces 65 of the lugs 56, thereby controlling an extent of the deformation of the retaining lugs 56. Boik also states that the retaining lugs 56 may be arranged such that the surfaces 65 engage both the back-up lugs 75 and the annular wall 64.

In the invention recited in claim 1, the supporting means are disposed between the column and the plate members such that the column is connected to the plate members through the supporting means. Accordingly, the supporting means support and suppress the plate members from bending inwardly. In Boik, the back-up lugs 75 are disposed between the annular wall and the retaining lugs 56. However, the back-up lugs 75 are not directly connected to the retaining lugs, and there is a space between the back-up lugs 75 and the retaining lugs 56. In the invention as recited in claim 1, the supporting means are directly connected to both the plate

members and the column, and there is no space between the supporting means and the plate members. In Boik, there is no disclosure or suggestion of the supporting means directly connected to the plate members and the column. Therefore, Boik does not disclose or suggest the features of the invention recited in claim 1.

In the invention recited in claim 8, the hold plug includes the guide means disposed between two of the plate members and extending from the back surface of the head portion. Each of the guide means has a length longer than that of each of the plate members. The column is integrally connected to the guide means to hold and support the guide means. In Boik, there is no disclosure or suggestion of the guide means disposed between two of the plate members and extending from the back surface of the head portion. Therefore, Boik does not disclose or suggest the features of the invention recited in claim 8.

Jaeger discloses a seal plug for closing an aperture in a panel. As shown in Figs. 1 to 3 in Jaeger, a seal plug 10 includes a cover cap 12; a set of retaining tabs 32, 34, 36, and 38; and a set of guide elements 60, 62, 64, and 66. The guide elements 60, 62, 64, and 66 are disposed on a bottom face of the seal plug for defining a first lead-in surface. The retaining tabs 32, 34, 36, and 38 are disposed on the bottom face of the seal plug for defining a second lead-in surface.

In the invention recited in claim 1, the hole plug includes the column projecting from the back surface of the head portion, and the supporting means. The supporting means are disposed between the column and the plate members such that the column is connected to the plate members through the supporting means. Accordingly, the supporting means support and suppress the plate members from bending inwardly. Jaeger does not disclose or suggest the column and the supporting means. Therefore, Jaeger does not disclose or suggest the features of the invention recited in claim 1.

In the invention recited in claim 8, the hole plug includes the column projecting from the back surface of the head portion

inside the plate members. The column is integrally connected to the guide means to hold and support the guide means. In Jaeger, the guide elements are disposed on the bottom face of the seal plug, and integrally connected with each other at the center of the bottom surface. In Jaeger, there is no disclosure or suggestion of the column projecting from the back surface of the head portion and integrated with the guide means. Therefore, Jaeger does not disclose or suggest the features of the invention recited in claim 8.

Kraus discloses a closure cover for closing an opening in a panel. As shown in Fig. 1 in Kraus, a closure cover 1 includes a circular closure plate 4 and a plurality of holding elements 5 extending from the closure plate 4. Each of the holding elements 5 is formed as a resilient arm 7 extending parallel to the axis of the closure plate 4. Each arm 7 includes an integral holding jaw 6. As shown in Fig. 6 in Kraus, a collar 8 extends from the closure plate 4, and a protrusion 9 is formed on a back surface of the arm 7 facing the collar 8 for limiting a radial inward movement of the arm 7. Kraus states that, although not shown, it is possible to provide the collar 8 with a support always lying across from the inside of the arm 7.

In the invention recited in claim 1, the supporting means are disposed between the column and the plate members such that the column is connected to the plate members through the supporting means. Accordingly, the supporting means support and suppress the plate members from bending inwardly. In Kraus, the protrusion is formed on the back surface of the arm facing the collar for limiting a radial inward movement of the arm. However, the protrusion is not directly connected to the collar and does not extend from the back surface of the closure plate, and there is a space between the arm and the collar. In claim 1, the supporting means are directly connected to both the plate members and the column, and the column is connected to the plate members through the supporting means. In Kraus, there is no disclosure or suggestion of the supporting means directly connected to the plate members and the column. There is no disclosure or suggestion that

such a support is connected to both the collar 8 and the arm 7. Therefore, Kraus does not disclose or suggest the features of the invention recited in claim 1.

In the invention recited in claim 8, the hold plug includes the guide means disposed between two of the plate members and extending from the back surface of the head portion. Each of the guide means has a length longer than that of each of the plate members. The column is integrally connected to the guide means to hold and support the guide means. In Kraus, there is no disclosure or suggestion of the guide means disposed between two of the plate members and extending from the back surface of the head portion. Therefore, Kraus does not disclose or suggest the features of the invention recited in claim 8.

Mejlso discloses a fastener 10 made of a resilient material, and comprising a shank 13 and an enlarged head 11. The shank 13 is formed of external shoulders 14, a neck portion 15 between the shoulders 14 and the head 11, and a closed solid tip 16. As shown in Fig. 4 in Mejlsø, the shank 13 has a U-shaped portion comprising two limbs 19 and 20 joined by a web 21, and two reversely bent extensions 17 and 18 of the limbs 19 and 20, respectively.

However, Mejlsø does not disclose the column projecting from the back surface of the head portion and the supporting means disposed between the column and the plate members such that the column is connected to the plate members through the supporting means as recited in claim 1 of the invention. Further, Mejlsø does not disclose the column projecting from the back surface of the head portion and the guide means disposed between two of the plate members as recited in claim 8 of the invention. Therefore, Mejlsø does not disclose or suggest the features of the invention recited in claims 1 and 8.

As explained above, the cited references do not disclose or suggest the features of the invention. Even if the cited references are combined, the invention is not obvious.

Reconsideration and allowance are earnestly solicited.

Respectfully submitted,

HAUPTMAN KANESAKA BERNER
PATENT AGENTS, LLP

by


Manabu Kanesaka
Reg. No. 31,467
Agent for Applicants

1700 Diagonal Road, Suite 310
Alexandria, VA 22314
(703) 519-9785